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A beverage packaging unit that includes a pouring orifice

5 The present invention relates to a beverage packaging unit.  
In present day society people drink a large number of differ-  
ent sorts of beverage, for instance aerated or carbonated  
beverages, juices, milk, milk-based beverages, but also pack-  
aged beer, ale and wine, for instance portion-wise packaging  
10 units.

The most common packaging units for present day beverages are  
bottles of varying sizes each with its characteristic appear-  
ance, i.e. a cylindrical package which narrows at its top to  
15 form an orifice from which the beverage can be drunk or  
poured, wherewith the orifice can be re-sealed with the aid  
of a screw-threaded cork or screw cap. The bottles are nor-  
mally made of plastic, such as PET or glass.

20 Another type of common packaging unit is an aluminium can of  
cylindrical shape, so as to enable such cans to be mutually  
stacked, and comprising a characteristic can opening proce-  
dure in which part of the aluminium tab is broken away from  
the upper side of the can and therewith create a hole from  
25 which the contents of the can be drunk or poured.

Another common type of packaging unit is the Tetra Pak with  
which a plastic wrapped drinking straw is glued to one of the  
two largest side surfaces of the Tetra Pak unit. The contents  
30 of this packaging unit are typically drunk by removing the  
straw from the unit and then removing the plastic wrapping  
and inserting the straw down through a hole provided in the  
upper side of the Tetra Pak packaging unit and covered with

aluminium foil. The contents of the Tetra Pack unit can then be drunk through the straw.

Another common beverage packaging unit is a glass bottle that  
5 includes a cap fitted over the neck orifice of the glass bottle and a hole from which the bottle contents can be drunk or poured.

All types of packaging units have certain positive and negative  
10 aspects. Generally speaking, some packaging units are not transport effective because they cannot be packed tightly together, while others cannot be re-sealed. These drawbacks are described in more detail hereinafter.

15 One problem with respect to some packaging units is that they are transported over long distances, most often in large freight vehicles. The shape of cylindrical beverage packaging units prevents optimal use of the freight volume of the vehicle. The typical PET bottles are usually placed in crates  
20 which are then stacked firmly one upon the other. This means that large volumes of space around the bottles and above and beneath respective bottles goes unused. This problem thus also exists with all cylindrical packaging units that have a tapering upper part where either a screw cork, or a screw cap  
25 is affixed. Another packaging unit that constitutes a part of this problem is the typical aluminium can. This can is also cylindrical and therewith results in unused freight volume around the cans.

30 Another problem with many beverage packaging units is that they can not be re-sealed. When such a packaging unit has been opened on a given occasion, in order to drink its contents, its either necessary for the person concerned to empty

the unit of its contents at one and the same time or to throw away beverage that he/she does not wish to drink at that particular time subsequent to having opened the unit.

5 The person drinking from the packaging unit will normally wish to drink a small amount, often at different times, and be able to re-seal the unit so that its content can be drunk later on. One solution to this problem exists in the bottle that is sealed with a screw-on cork, for instance the PET-  
10 bottle, although these bottles have less effective freight-volume properties, as mentioned above. Other typical beverage packaging units, such as aluminium cans, glass bottles provided with caps or Tetra Pak packaging units cannot be re-sealed.

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One further drawback and problem encountered with the Tetra Pak packaging unit that includes a drinking straw is that the Tetra Pak unit is deformable, meaning that when the unit has been opened with the aid of the straw and while gripping the  
20 Tetra Pak unit with unaccustomed fingers, the unit is often squeezed together to such an extent that liquid will gush from the Tetra Pak unit like a fountain and therewith land outside the unit.

25 All of the aforesaid problems associated with known beverage packaging technology are solved by means of the present invention, which provides a stackable and re-sealable beverage packaging unit.

30 Accordingly there is provided in accordance with the invention a beverage packaging unit that includes an opening from which the liquid contents of the unit can be drunk or poured, wherewith said opening can be closed and sealed with the aid

of a closure element, wherein the invention is characterized in that the packaging unit is parallelepipedic and comprises a hollow box-like body and said closure element; in that said parallelepipedic hollow box-like body has a bevelled corner  
5 at which there is formed a three-sided or triangular surface that connects with said box-like body; in that there projects out from said surface a tubular part that includes said opening; in that said closure element includes a generally pyramidal body which is shaped so that when in abutment with  
10 said bevelled corner of said box-like body it forms, together with said body, said parallelepipedic packaging unit; in that said closure element includes a cavity for receiving said tubular part; and in that the packaging unit includes co-acting fasteners on said tubular part and also in said cavity  
15 for pivotally retaining said closure element at said tubular part, so that said box-like body and said closure element will form a parallelepiped in given pivoted positions of the closure element; in that said cavity extends through the closure element out to an opening on one of the outer sides  
20 of said closure element; and in that the packaging unit is open when the closure element has been pivoted or turned to a position in which said opening and the orifice in the closure element are centrally opposite one another.

25 The invention will now be described in more detail partly with reference to exemplifying embodiments illustrated in the accompanying drawings, in which

Figure 1 is a diagrammatic illustration of the packaging unit  
30 with the closure element, including the opening, in abutment with the box-like body;

Figure 2 is a cross-sectional view of the packaging unit;

Figure 3 illustrates the bevelled corner of the box-like body, including the outwardly protruding tubular part and its opening;

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Figure 4 illustrates the closure element and its orifice; and

Figure 5 illustrates a beverage packaging unit in a closed and an open state respectively.

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Figure 1 shows a beverage packaging unit 1 which includes an opening 5 from which the beverage can be drunk or poured, which opening 5 is resealable by means of a closure element 3.

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According to the invention, the packaging unit 1 is parallelepipedic and comprises a hollow box-like body 2 and the closure element 3. One of the corners of the parallelepipedic hollow body 2 is bevelled to provide a three-sided, or triangular, surface 9. This three-sided surface 9 connects with the box-like body 2. An outwardly projecting tubular part 4, which includes an opening 5 and top surface 12, is located on the three-sided surface 9.

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The closure element 3 includes a generally pyramidal body that is configured so that when the closure element 3 is in abutment with the three-sided surface 9 at the bevelled corner of the box-like body 2, said pyramidal body will form said parallelepipedic packaging unit 1 together with the box-like body 2. The closure element 3 includes a cavity 6 which is intended to receive the tubular part 4. Mutually co-acting fasteners 11 for instance snap fasteners or screw threads,

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are provided on both the tubular part 4 and in the cavity 6. These co-acting fasteners 11 retain the pivotal closure element 3 on the tubular part 4, so that the box-like body 2 and the closure element 3 will form said parallelepipedic packaging unit 1 in given pivoted positions of the closure element 3. The cavity 6 extends through the closure element 3 out to an orifice 7 on one of the outer sides 13 of said closure element. The unit 1 is open when the closure element 3 has been pivoted or turned to a position in which said opening 5 and the orifice 7 of the closure element 3 are centrally opposite one another.

Respective top and bottom sides of the packaging unit 1 or the sides of said unit 1 are defined in figure 1. The box-like body 2 is shown standing on its bottom side in figure 1. The side opposite to the bottom side is referred to as the top side of the unit 1. The bevelled corner of the box-like body 2 is located at one of the upper corners of the body. The closure element 3 is therewith placed at one of the corners of said body 2 that is in contact with the top side of said body. The orifice 7 of the closure element 3 is placed on the top side of said element 3.

In one embodiment of the invention, the fastener 11 is a snap fastener. The snap fastener is preferably comprised of an edge 8 located externally on the tubular part 4 and a recess 10 placed within the cavity 6 of the closure element 3. The fastener 11 is adapted so that the closure element 3 can be pivoted or turned about the tubular part 4.

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Figure 2 is a cross-sectional view of the packaging unit 1. In one embodiment of the invention, the closure element 3 is designed for sealing abutment with the opening 5 of the tubu-

lar part 4 and also with the top surface 12 of the tubular part 4. In another embodiment of the invention, the closure element 3 is designed for sealing abutment with the three-sided surface 9 of the box-like body 2. In a further embodiment of the present invention, the closure element 3 is designed for sealing abutment with the opening 5 of the tubular part 4 and the top surface 12, and also with the three-sided surface 9 of the box-like body 2.

10 The packaging unit 1 is in a closed and sealed state when the opening 5 of the box-like body 2 and the orifice 7 of the closure element 3 are not registered centrally opposite one another; see figure 3, 4, 5. This non-registered state is achieved by pivoting or turning the closure element 3, enabled by the fastener means 11 of said packaging unit, to a position in which the orifice 7 of the closure element 3 is positioned centrally over the top surface 12 of the tubular part 4, instead of positioning the orifice 7 of the closure element 3 centrally over the opening 5 of the tubular part 4; see above.

Preferably, when the packaging unit 1 is in an open state, the orifice 7 of the closure element 3 will be positioned on the upper side of said packaging unit. The beverage contained in the packaging unit 1 is therewith retained until a person wishes to drink from the unit and therewith turns the unit 1 so as to enable beverage to run from the packaging unit. This construction enables the unit 1 to be filled to its full capacity. If the orifice 7 is placed on the outer sides 13 of the closure element 3 that do not form an upper side of the unit 1, the beverage will be able to run out from the unit 1. The unit 1 cannot then be filled to its full capacity.

Plastic bridges 14 are preferably fastened between the box-like body 2 and closure element 3 in abutment with said body 2, regardless of the embodiment concerned. When turning the closure element 3 relative to the box-like body 2 and  
5 therewith open the unit 1, theses bridges 14 will be broken, therewith indicating that the unit has been opened.

Although a number of embodiments have been described above, it will be understood that the outwardly projecting tubular  
10 part 4 of the box-like body 2, the opening 5, the cavity 6 of the closure element 3, and the orifice 7 may be designed in some other appropriate manner without departing from the basic concept of the invention.

15 The present invention shall not therefore be considered to be limited to the described and illustrated exemplifying embodiments thereof, since variations can be made within the scope of the accompanying claims.